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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,731	02/04/2004	Liao Youn-Chyuan	14182 B	5638

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EXAMINER

MICHALSKI, SEAN M

ART UNIT PAPER NUMBER

3725

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,731

Applicant(s)

YOUN-CHYUAN, LIAO

Examiner

Sean M. Michalski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 10/772731, filed on 02/04/2004.

Claim Objections

2. Claim 4 is objected to because of the following informalities: "groove in corresponding" should read --groove corresponding--; "with less elements" should read - with fewer elements--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 1 recites the limitation "said rotating socket having said hole". There is no hole set out in conjunction with the rotating socket. There is insufficient antecedent basis for this limitation in the claim. For examination purposes the above passage will be read as --said rotating socket having a hole--.
5. Claim 1 recites the limitation "said stopping ring is sleeved on the end of said shaft that goes through said hole of said of said rotating socket" in the third paragraph of the claim. It is unclear which end "goes through said hole of said rotating socket" since both ends of the shaft are within the rotating socket and therefore "go through" (or are within) said rotating socket. It is unclear which end the stopping ring is sleeved on. There is insufficient antecedent basis for this limitation in the claim. For examination purposes,

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as best understood by the examiner "said stopping ring is sleeved on the end of said shaft that goes through said hole of said of said rotating socket" will read as --said stopping ring is sleeved on the end of said shaft where the tool head is inserted --.

6. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. The language "can fit different tool heads, said tool head having an insertion section" could refer to other tool heads not detailed. This claim is an omnibus type claim.

7. Claim 4 recites the limitation "for inserting said tool head". A tool head fixer is set out in the claim, but no tool head. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 4 recites the limitation "said rotating socket having said hole". There is no hole set out in conjunction with the rotating socket. There is insufficient antecedent basis for this limitation in the claim. For examination purposes the above passage will be read as --said rotating socket having a hole--.

9. Claim 4 recites the limitation "disposed on the end" when previously an insertion groove was disclosed on "it's front end". The limitation "disposed on it's end is not specific to which end. There is insufficient antecedent basis for this limitation in the claim. For examination purposes "disposed on the end" will read as -- disposed on the front end".

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 1,2, 3-1, 3-2, 4, 5, 6-4, 6-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu (US-PGPUB 2003/0188434) in view of Parmley, R.O. (2000) Illustrated Sourcebook of Mechanical components. (pp. 9-4 – 9-9, 12-2, 12-5). McGraw-Hill in further view of Huang (USPN 5,772,168) in further view of Carpinetti (USPN 5,957,634).

Chiu teaches a tool head fixer (449 figure 1) comprising a shaft (443 figure 1) a rotating socket (50 figure 1) with a stopping ring (448 figure 4), an insertion groove (441 figure 1) disposed on its front end, the shaft having a connecting hole perpendicularly connected to said insertion groove (445 figure 1), a connecting shaft section (4 figure 1) protruding from the rear end of said shaft (figure 1), and having a fixing groove (421 figure 1), a pressing bolt (446, figure 1), said rotating socket having an eccentric groove (53 figure 1) corresponding to said pressing bolt (446, figure 1) and being pivotally sleeved (5 figure 2) on said shaft, and having a tool head (8 figure 1) with a fixing hole

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(801 figure 1). Chiu further teaches a locking groove (447 figure 1) and ring (448 figure 1).

Chiu further teaches an abutment surface (449 figure 1) to retain the rotating socket from longitudinal movement. Parmley teaches the replacement of abutment surfaces which retain rotating sockets with E-shaped locking rings and grooves (see 12-2, figure 1, which demonstrates the replacement of an abutment surface on a cylinder with a retaining ring—figures on 12-5 show E-shaped retaining rings used as equivalents of any other retaining ring). In the same field of invention it would have been obvious to one skilled in the art at the time of the invention to modify Chiu by replacing the abutment surface with an E-shaped retaining ring as taught by Parmley. The motivation to combine is that using an E-shaped retaining ring saves material, simplifying design and reducing cost (Parmley, 12-2 see subtitle).

Regarding claim 1, Chiu does not teach that the pressing bolt as disclosed in Chiu is t-shaped with a conical spring sleeved on said pressing bolt. Huang teaches the use of a t-shaped pressing bolt (52 figure 1) with a conical spring (51 figure 1) sleeved on said pressing bolt (see figure 1). In the same field of invention it would have been obvious to one skilled in the art at the time of the invention to modify Chiu by using a t-shaped pressing bolt with a spring sleeved thereon (instead of a sphere) as taught by Huang. T-shaped pressing bolts with springs sleeved thereon are equivalent structures to spherical pressing bolts, and the substitution of one for the other requires only routine skill in the art. Huang shows that a t-shaped pressing bolt with a cylindrical spring sleeved thereon is an equivalent structure known in the art. Therefore, because these

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two elements were art recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute a t-shaped pressing bolt with a cylindrical spring sleeved thereon for a spherical pressing bolt.

Regarding claim 1, Chiu teaches a tool head with a fixing groove, but not a fixing hole, in correspondence with said pressing bolt. Carpinetti teaches the use of a tool head (34 figure 11B) with a fixing *hole* (28 figure 11B) in correspondence with the pressing bolt (see figure 11A). In the same field of invention it would have been obvious to one skilled in the art at the time of the invention to modify Chiu by providing a tool head with a hole as taught by Carpinetti. The motivation to combine is that the hole will receive said pressing bolt and secure said tool head more securely. This amounts to mere substitution of components, which requires only routine skill in the art.

13. Regarding claim 2, Chiu as discussed above does not teach the limitation that said pressing bolt have a conical section. Parmley further teaches the use of conical sections on pressing bolts on page 9-4 (column 1, 2/3 of the way down, and figure 5 on the same page). It would have been obvious to one skilled in the art at the time of the invention to modify Chiu by using a pressing bolt with a conical section, as taught by Parmley. This amounts to a routine substitution of parts. The motivation to combine is that a conical section is more accurate than a semi-circular point as disclosed in Parmley (column 1, 2/3 of the way down).

14. Regarding claim 3-1 and 3-2 Chiu in view of Huang as discussed above teaches all the elements of the claimed invention except for the limitation that said pressing bolt

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have a round head on its one end. Huang further teaches that the pressing bolt (26 figure 3) has a round head (28 figure 3), the motivation to combine this element of Huang with Chiu has already been treated in section 12, paragraph 4.

15. Regarding claim 4 Chiu as discussed above teaches all the elements of the claimed invention except for the limitation that a multi-angular groove is disposed on the end for inserting said tool head. Chiu further discloses a multi-angular groove (441 figures 1 and 2).

16. Regarding claim 5 Chiu as discussed above teaches all the elements of the claimed invention except for the limitation that said pressing bolt have a conical section. Parmley further teaches the use of conical sections on pressing bolts on page 9-4 (column 1, 2/3 of the way down, and figure 5 on the same page). It would have been obvious to one skilled in the art at the time of the invention to modify Chiu by using a pressing bolt with a conical section, as taught by Parmley. This amounts to a routine substitution of parts. The motivation to combine is that a conical section is more accurate than a semi-circular point, as disclosed in Parmley (column 1, 2/3 of the way down).

17. Regarding claim 6-4 and 6-5 Chiu as discussed above teaches all the elements of the claimed invention except for the limitation that said pressing bolt have a round head on its one end corresponding to said rotating socket. Huang further teaches that the pressing bolt (26 figure 3) has a round head (28 figure 3). The motivation to combine this element of Huang with Chiu has already been treated in section 12, paragraph 4

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. T.R. Young (USPN 3,342,502) discloses a tool locking mechanism using a rotating socket with an accentric groove, a T-bolt with a rounded head and a conical section, a sleeved spring on said locking bolt and a multi-angular groove. Hoffman (USPN 3,750,283) discloses a shaft with a slot, a spring biased t-bolt with a rounded head, a *translating* socket with a camming groove similar in function to applicants accentric groove, a tool head with a hole that cooperates with said T-bolt. Laverick (USPN 5,421,232) discloses a tool head fixer, a tool head with a hole, a groove, a multi-angular groove. Phillips (USPN 5,575,071) and Marinkovich et al. (USPN 6,209,208) both disclose many elements of the claimed invention.

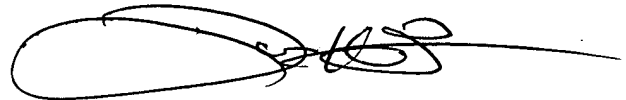
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean M. Michalski whose telephone number is 571-272-6752. The examiner can normally be reached on M-F 7:30AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on 571-272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SMM

A handwritten signature in black ink, appearing to read 'D. Banks', with a large, stylized loop at the beginning and a horizontal line extending to the right.

**DERRIS H. BANKS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700**